GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA

UNSTARRED QUESTION NO:1436
ANSWERED ON:29.07.2015
Atomic Energy for Peaceful Purpose
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Will the Minister of ATOMIC ENERGY be pleased to state:

(a) the areas where atomic energy has been used for peaceful purposes in the country;

(b) whether the Government has contemplated new areas to use the atomic energy; and

(c) if so, the details thereof?

Answer

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (Dr. JITENDRA SINGH) :

(a)Atomic Energy is being used in the country for many peaceful applications in the areas of power generation, healthcare, agriculture, food preservation, industry and research. There are 21 nuclear power plants currently operating in the country with a total installed capacity of 5780 MWe and several more are under construction and planning stage. In addition there are research reactors operating at Trombay and Kalpakkam which are being used for basic and applied research, radioisotope production, testing of materials and manpower training. The radio-isotopes produced from these research and power reactors are being used for radiation sterilisation of medical products, production of radiopharmaceuticals, nuclear medicine and cancer treatment. The radio-isotopes are also used for production of improved varieties of seeds in agriculture, radiation processing of food items like spices, onions, potatoes, and mangoes. Radiation technologies developed in Bhabha Atomic Research Centre (BARC) have also been used for various industrial applications like radiography, detecting leakage points in long natural gas pipelines, tracking petroleum pipelines, for assisting dredging operations in ports, gamma ray densitometers, radiography cameras and blood irradiators.

(b)Yes, Sir.

(c)Continuous research, development and deployment of new and advanced technologies for application of atomic energy have been a priority area for the Department of Atomic Energy. These programmes have been resulting in a very large range of new applications and products in the broad areas indicated in answer to part (a) above. A few prominent examples are provided below:

An Advanced Heavy Water Reactor, to mainly use thorium based fuel, with advanced passive safety systems, has been developed. A Compact High Temperature Reactor, for development of high temperature process heat for generation of Hydrogen using water splitting reaction, has also been developed. BARC has established Sludge Hygienisation technologies where sludge is hygienised due to inactivation of pathogens by radiation effects, producing high quality manure for applications in agriculture. A large range of novel diagnostic and therapeutic applications of new radioisotopes have been developed. Electron Beam Accelerator technology has been extensively used leading to the delivery of many radiation processed high performance products in India. Radiation cross linked wire and cables, O-rings, heat shrinkable materials are some of the important products that have been developed. Some of the main industries in which electron beam has been used in India are mentioned below.

a)Cable and electrical insulation manufacturers
b)Heat shrinkable product manufacturers
c)Plastic recycling industry
d)Diamond industry

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